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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/582,980	HU ET AL.	
	Examiner	Art Unit	
	KHALID ABDALLA	4173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06/15/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *06/15/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This application has been examined .Claims 1-16 are pending in this application

Information Disclosure Statement

2. The Examiner has considered the references listed on the Information Disclosure statement submitted on 06/15/2006 (see attached PTO-1449).

Drawings

3. The examiner contends that the drawings submitted on 06/15/2006 are acceptable for examination proceedings

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iyer et al (US 20040071131 A1) in view of Dobbins et al (US 5485455 A) hereinafter referred to as Iyer and Dobbins.

Regarding claim1, Iyre disclose a method for realizing call route by employing route service devices, which is employed in next generation network with soft switch (The Soft switch translates the control signals see [0005]) as core control device,

comprising the following steps of:

(a) when user route changes, a sof switch control device reporting the changed route information to a route service device of a father node (a centralized call control packet network, more particularly to managing communications between policy systems and Soft switches/Call Agents to manage calls see [0002]), the information including user character information, user node information and route operation type (The Soft switch translates the control signals from the PSTN, such as those using SS7 signaling, to the signals used in the packet network, such as IP signaling see[0005]).

(b) the route service device receiving the report looking up a record of a user to be registered in a route information database, and registering route record of the user in the route information database according to the reported information and the user record (a database or group of databases that include routing information[0021] and also see (the user information is transmitted to the policy system and the policy system either grants or denies the call[0016] also see The protocol converter may reside within another network device, such as the MGC or the policy system making the decision to accept or reject the call[0020]).

(e) when calling across domains, the soft switch control device which the calling belongs to initiating an inquiry to the route service device of father node (The protocol converter may reside within another network device, such as the MGC or the policy system making the decision to accept or reject the call[0020]).

(f) the route service device receiving inquiry request looking up the route information of a user to be looked up in the route information database (the user

information is transmitted to the policy system and the policy system either grants or denies the call[0016] also see The protocol converter may reside within another network device, such as the MGC or the policy system making the decision to accept or reject the call[0020]), if obtaining an inquiring result that the user route or the user does not exist, performing step (h), otherwise, performing step (g);

(g) the route service device continuing to inquire the node in said route record, if there is no route record, continuing to inquire the father node, and returning to step (f) (the user information is transmitted to the policy system and the policy system either grants or denies the call see [0016]); and

(h) returning the inquiring result to the node initiating the inquiry, the node receiving the result continuing to return the result to the node inquiring it, until returning to the soft switch control device which first initiates the inquiry (The message within which the call is either granted or denied will be referred to as a call disposition message see[0024]) and also see soft switch and standard TCAP replay [0023]).

Lyer dose not discloses: (c) the route service device finishing registration broadcasting changed route information to the father node when the route information of the user changes in the local node relative to the father node;

(d) the route service device receiving the broadcast registering and broadcasting the received route information according to the same method of the route service device receiving the report.

However Dobbins teaches (c) The route service device finishing registration broadcasting changed route information to the father node when the route information of

the user changes in the local node relative to the father node (each switch receives cells from each port and then forwards them out the correct port (Unicast) or ports (Multicast). As the cell is forwarded to a switch, its header is modified with "next switch" routing information. This process continues at each cell switch until the cell is received at the end node see col: 14 lines 37-58).

(d) The route service device receiving the broadcast registering and broadcasting the received route information according to the same method of the route service device receiving the report (The call processor 89 provides a means for requesting connections to be established between two end systems. In the case where the source-destination MAC addresses are not in the packet frame, i.e., usually in a frame that has a broadcast--all hosts--MAC address, the call processor will decode the packet to find source or destination network addresses and will use these to map back into the mapped addresses from the external directory located in the SCS see col: 16 lines 19 - 35 and FIG 7B-7C).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Dobbins related to packet –based high transfer rate and have modified the disclosure of Lyer which directed to enforcing policy on a soft switch based in order to efficiently facilitate data transfer .

Regarding claim 2, note that Dobbins teaches, wherein when performing registration in step (b), if the operation type of the report information corresponds to user moving in, when there is no route record of the user in the route information database, establish a

new record, when the record information of the user is different from the report information, update the record in conformity with preset condition, otherwise, not perform the operation; if the operation type of the report information corresponds to user moving out, delete or update the route record of the user which has the same node information (The discovery agent 88 provides a mapping of end systems to switching ports through a passive listening (snooping) capability and a registering of end system addresses and port locations of the host switch with an external directory located in the SCS see col:16 lines 12-67).

Regarding claim 3, note that, Dobbins teaches, wherein said operation types have two kinds, which are addition and deletion; or have three kinds, which are addition, move-out and account-cancel, and said user character information includes information of specific domain (The call processor 77 removes the ARP request from the queue and fills in the destination MAC address and sends an ARP response to the source end system. The source end system now has an updated ARP cache see col: 17 lines 49-67 and col: 18 lines 1-10).

Regarding claim 4, note that Iyer disclose, wherein the user node in said step (a) is the type of soft switch control device, or the type of route service device (The Soft switch translates the control signals from the PSTN, such as those using SS7 signaling, to the signals used in the packet network, such as IP signaling see [0005] and [0002]).

Regarding claim 5, note that Dobbins teaches, wherein in said step (c), the route service device finishing the registration also broadcasts the route information to the designated brother node when the route information of the user in the local node changes relative to the designated brother node (each switch receives cells from each port and then forwards them out the correct port (Unicast) or ports (Multicast). As the cell is forwarded to a switch, its header is modified with "next switch" routing information. This process continues at each cell switch until the cell is received at the end node see col: 14 lines 37-58).

Regarding claim 6, note that Lyre disclose, wherein said operation types have two kinds, which are addition and deletion, in said step (f), the route service device performing inquiry makes judgment according to the looking up result in the route information database (the user information is transmitted to the policy system and the policy system either grants or denies the call[0016] also see The protocol converter may reside within another network device, such as the MGC or the policy system making the decision to accept or reject the call[0020]) by following logic:
Also note that Dobbins teaches if the looking up result is that there is no record of user to be inquired, for the node which is at the highest layer, obtaining the looking up result that there is no user, for the node which is not at the highest layer, continuing inquiry (If the answer in step 309 is no, then the call processor treats it as an unknown connection (step 318), asks the SCS to set up the call (step 319) and discards the packet (step

320) see col:17 lines 4-14).; and if there is record of user to be inquired in the looking up result, obtaining the inquiring result of the user route when the user node in the route record is the soft switch control device, while continuing inquiry when it is not soft switch control device (The call processor 77 processes the ARP request REQ packet and performs SFPS protocol to UNI (User to Network Interface) translation see col:17 lines 49-67 and col:18 lines 1-10).

Regarding claim7, note that Dobbins teaches The method of claim 1, wherein said operation types have three kinds: addition, move-out and account-cancel, in said step (f), the route service device performing inquiry makes judgment according to the looking up result in the route information database (The call processor 77 removes the ARP request from the queue and fills in the destination MAC address and sends an ARP response to the source end system. The source end system now has an updated ARP cache see col:17 lines 49-67 and col:18 lines 1-10) by
the following logic:
If the looking up result is that there is no record of user to be inquired, for the node which is at the highest layer, obtaining the looking up result that there is no user, for the node which is not at the highest layer, continuing inquiry (If the answer in step 309 is no, then the call processor treats it as an unknown connection (step 318), asks the SCS to set up the call (step 319) and discards the packet (step 320) see col:17 lines 4-14); If the looking up result is that there is record of user to be inquired, identifying the operation type in the record :

when the operation type is addition, if the user node in the record is the type of soft switch control device, obtaining the looking up result of the user route (The call processor and the host agent determine whether it is a broadcast destination (step 309). If the answer is yes, the call processor decodes the packet to find the network protocol source and destination addresses (steps 310-311) see col: 16 lines 51-67). if the user node is the type of route service device, continuing inquiry; when the operation type is move-out, if the node is at the highest layer, obtaining the looking up result that there is no user (If the answer in step 309 is no, then the call processor treats it as an unknown connection (step 318), asks the SCS to set up the call (step 319) and discards the packet (step 320) see col:17 lines 4-14), if the node is not at the highest layer, continuing inquiry; and when the operation type is account-cancel, obtaining the looking up result that there is no user.

Regarding claim8, note that Lyre modified by Dobbins teaches the system for realizing the method, which is employed in next generation network with soft switch as core control device (Lyre :The Soft switch translates the control signals see [0005]), and includes several soft switch control devices with users, wherein, several route service devices are further included, each of said route service devices and each of said soft switch control device form a node of system (Lyre :The network resources are communicated with via the Transaction Capabilities Applications Part (TCAP) of SS7 signaling see [0017]), and the nodes are networked in a layered form, each sub-node has at least a father node, and each father node has at least a sub-node, said soft

switch control device is a node at the lowest layer, and said route service device should have a sub-node, in which (Lyre :a Soft switch based architecture that may include interface to SS7 network. The method comprises receiving a new call from the TDM switch including PSTN, and translating the incoming call information to an access request in the form of a TCAP query message see [0009]): said soft switch device reports changed route information to the route service device of father node when its user adding or moving out, and initiates a route inquiry to the route service device of father node when its user calls across domains (Lyre :The protocol converter may reside within another network device, such as the MGC or the policy system making the decision to accept or reject the call[0020]); and said route service device is for registering the reported information (Dobbins :The discovery agent 88 provides a mapping of end systems to switching ports through a passive listening (snooping) capability and a registering of end system addresses and port locations of the host switch with an external directory located in the SCS see col:16 lines 12-67). and performing adding, deleting and updating of route record in a route information database(Dobbins :The call processor 77 removes the ARP request from the queue and fills in the destination MAC address and sends an ARP response to the source end system. The source end system now has an updated ARP cache see col: 17 lines 49-67 and col:18 lines 1-10) , broadcasting changed route information to related node, performing inquiry after receiving the inquiry request (Lyre: the call processor will decode the packet to find source or destination network addresses and will use these to map back into the mapped addresses from the external directory located in the SCS

see col: 16 lines 19 -35 and FIG 7B-7C), and returning inquiring result to the node initiating the inquiry (Lyre :The message within which the call is either granted or denied will be referred to as a call disposition message see[0024] and [0023]) .

Regarding claim9, note that Dobbins teaches the system, wherein said route service device comprises a route information database module, a route registration module, a route broadcast module and a route inquiry module, in which (the look-up engine checks to see whether this source-destination pair is already located in the connection database. If it is not found in step 308, the packet is given to the host agent. The call processor and the host agent determine whether it is a broadcast destination (step 309). If the answer is yes, the call processor decodes the packet to find the network protocol source and destination addresses see col: 16 lines 39-67 and col: 17 lines 1-14 and FIG.7C).

The route information database module is for storing the route record of user, inputting the user route record, and providing a interface for accessing the user record (The switching fabric provides the physical paths or routes that allow users to send information to each other. Access to the switching fabric is gained through an access port see col:3 line 52-63);the route registration module is for receiving the route information reported or forwarded by the route broadcast module, looking up the record of user to be registered in the route information database, and registering the route record of the user in the database according to the reported information and the content of user record report (The call processor 89 provides a means for requesting

connections to be established between two end systems. In the case where the source-destination MAC addresses are not in the packet frame, i.e., usually in a frame that has a broadcast--all hosts--MAC address, the call processor will decode the packet to find source or destination network addresses and will use these to map back into the mapped addresses from the external directory located in the SCS see col: 16 lines 19 - 35 and FIG 7B-7C); the route broadcast module is for receiving the broadcasted route information, and broadcasting the route information of the user to its father node or both to the father node and designated brother node when the route information of the user in local node changes relative to the father node or the father node and the designated brother node (each switch receives cells from each port and then forwards them out the correct port (Unicast) or ports (Multicast). As the cell is forwarded to a switch, its header is modified with "next switch" routing information. This process continues at each cell switch until the cell is received at the end node see col:14 lines 37-58); and
the route inquiry module is for receiving or sending inquiry request, looking up the record of the user to be inquired in the route information database, returning the inquiring result to the node requesting the inquiry after finding the route of the user, and determining that there is no user (If the answer in step 309 is no, then the call processor treats it as an unknown connection (step 318), asks the SCS to set up the call (step 319) and discards the packet (step 320) see col:17 lines 4-14) or receiving the inquiring result from other nodes, otherwise (If the answer is yes, the call processor decodes the packet to find the network protocol source and destination addresses see col: 16 lines 39-67 and col: 17 lines 1-14 and FIG.7C). Continuing inquiring the node in the route

record, and if there is no route record, continuing inquiring its father node.

Regarding claim10, Lyre disclose a route service device employed in next generation network, which comprises a route information database module (a centralized call control packet network, more particularly to managing communications between policy systems and Soft switches/Call Agents to manage calls see [0002]) , a route registration module, a route broadcast module and a route inquiry module, in which, the route information database module is for storing route record of user, inputting the user route record (Each POP may have a gateway, such as 14, that allows access to the network and provides information to the policy system see[0016] and [0017]). and providing a interface for accessing the user record;
Lyre does not disclose the route registration module is for receiving the route information reported or forwarded by the route broadcast module, looking up the record of user to be registered in the route information database, and registering the route record of the user in the database according to the reported information and the content of user record ; the route broadcast module is for receiving the broadcasted route information, and broadcasting the route information of the user to its father node when the route information of the user in local node changes relative to its father node; and the route inquiry module is for receiving or sending inquiry request, looking up the record of the user to be inquired in the route information database, returning the inquiring result to the node requesting the inquiry after finding the route of the user, and determining that there is no user or receiving the inquiring result from other nodes,

otherwise, continuing inquiring the node in the route record, and if there is no route record, continuing inquiring its father node.

However Dobbins teaches the route registration module is for receiving the route information reported or forwarded by the route broadcast module, looking up the record of user to be registered in the route information database, and registering the route record of the user in the database according to the reported information and the content of user record (The discovery agent 88 provides a mapping of end systems to switching ports through a passive listening (snooping) capability and a registering of end system addresses and port locations of the host switch with an external directory located in the SCS see col:16 lines 12-67). The route broadcast module is for receiving the broadcasted route information, and broadcasting the route information of the user to its father node when the route information of the user in local node changes relative to its father node (each switch receives cells from each port and then forwards them out the correct port (Unicast) or ports (Multicast). As the cell is forwarded to a switch, its header is modified with "next switch" routing information. This process continues at each cell switch until the cell is received at the end node see col: 14 lines 37-58). ; and

the route inquiry module is for receiving or sending inquiry request, looking up the record of the user to be inquired in the route information database, returning the inquiring result to the node requesting the inquiry after finding the route of the user, and determining that there is no user (If the answer in step 309 is no, then the call processor treats it as an unknown connection (step 318), asks the SCS to set up the call (step 319) and discards the packet (step 320) see col:17 lines 4-14), or receiving the inquiring

result from other nodes, otherwise (If the answer is yes, the call processor decodes the packet to find the network protocol source and destination addresses see col: 16 lines 39-67 and col: 17 lines 1-14 and FIG.7C)., continuing inquiring the node in the route record, and if there is no route record, continuing inquiring its father node.
Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Dobbins related to packet –based high transfer rate and have modified the disclosure of Lyer which directed to enforcing policy on a soft switch based in order to efficiently facilitate data transfer .

Regarding claim 11, note that Dobbins teaches the route service device, wherein said route registration module comprises: a report information receiving unit, for receiving route information reported by the soft switch control device, or forwarded by the route broadcast module; a registration access unit, for looking up the route record (the look-up engine checks to see whether this source-destination pair is already located in the connection database. If it is not found in step 308, the packet is given to the host agent. The call processor and the host agent determine whether it is a broadcast destination (step 309). If the answer is yes, the call processor decodes the packet to find the network protocol source and destination addresses see col: 16 lines 39-67 and col: 17 lines 1-14 and FIG.7C).
of the user in the route information database according to the information of the user to be registered in the reported information; and a register judgment unit, for establishing a new record if there is no route record of the user when the operation type corresponds

to the user moving in, updating the record in the database (The discovery agent 88 provides a mapping of end systems to switching ports through a passive listening (snooping) capability and a registering of end system addresses and port locations of the host switch with an external directory located in the SCS see col:16 lines 12-67). in conformity with preset condition if the route record information of the user is different from the reported information, otherwise, not performing operation, deleting or updating the route record of the user if the operation type of the report information corresponds to user moving out and the user node in the user record is same to the node in the reported information(The call processor 77 removes the ARP request from the queue and fills in the destination MAC address and sends an ARP response to the source end system. The source end system now has an updated ARP cache see col: 17 lines 49-67 and col: 18 lines 1-10).

Regarding claim 12, note that Dobbins teaches the route service device of claim 10, wherein said route broadcast module comprises: a broadcast information receiving unit, for receiving the route information broadcasted by other nodes (The discovery agent 88 provides a mapping of end systems to switching ports through a passive listening (snooping) capability and a registering of end system addresses and port locations of the host switch with an external directory located in the SCS see col:16 lines 12-67)., forwarding the information to the route registration module; a broadcast judgment unit, for judging whether the route information of the user to be registered from its node to its father node changes, if yes, handing over the route information of the user to the route

information broadcast unit; and a route information broadcast unit, for broadcasting the changed route information to the father node (the look-up engine checks to see whether this source-destination pair is already located in the connection database. If it is not found in step 308, the packet is given to the host agent. The call processor and the host agent determine whether it is a broadcast destination (step 309). If the answer is yes, the call processor decodes the packet to find the network protocol source and destination addresses see col: 16 lines 39-67 and col: 17 lines 1-14 and FIG.7C).

Regarding claim 13 note that Dobbins teaches The route service device of claim 10, wherein said route inquiry module comprises: an inquiry interface unit, for receiving inquiring request from other nodes or sending inquiry request to other nodes (The discovery agent 88 provides a mapping of end systems to switching ports through a passive listening (snooping) capability and a registering of end system addresses and port locations of the host switch with an external directory located in the SCS see col:16 lines 12-67), and returning the inquiring result of the module to the node requesting the inquiry or forwarding the inquiring result received from other nodes; an inquiry access unit, for looking up in the route information database according to the character information of the user to be looked up in the inquiry request (the look-up engine checks to see whether this source-destination pair is already located in the connection database. If it is not found in step 308, the packet is given to the host agent. The call processor and the host agent determine whether it is a broadcast destination (step 309). If the answer is yes, the call processor decodes the packet to find the network protocol

source and destination addresses see col: 16 lines 39-67 and col: 17 lines 1-14 and FIG.7C),

and reporting the inquiring result to the inquiry judgment unit; and an inquiry judgment unit, for judging whether the inquiring result is that the user route does not exist or the user does not exist according to the looking up (the look-up engine checks see col:16 lines 12-67) and (the use of a directory of end systems containing policy, call attributes, location, paths, quality of service, etc., the connection is either rejected or accepted see col:4 lines 10-20), or it is necessary to send inquiry request to related node, and to indicate the inquiry interface unit to perform corresponding operation.

Regarding claim 14, note that Dobbins teaches the route service device of claim 10, wherein said route broadcast module broadcasts the route information to designated brother node when the route information of the user in local node changes relative to the designated brother node (each switch receives cells from each port and then forwards them out the correct port (Unicast) or ports (Multicast). As the cell is forwarded to a switch, its header is modified with "next switch" routing information. This process continues at each cell switch until the cell is received at the end node see col: 14 lines 37-58).

Regarding claim 15, note that Dobbins teaches The route service device of claim 10, wherein the operation types of said route record have two kinds: addition and deletion, said inquiry judgment unit database (The discovery agent 88 provides a

mapping of end systems to switching ports through a passive listening (snooping) capability and a registering of end system addresses and port locations of the host switch with an external directory located in the SCS see col:16 lines 12-67).makes judgment according to the looking up result in the route information database by the following logic:

if the looking up result is that there is no record of the user to be looked up, for the node that is at the highest layer, determining that the user does not exist, if the node is not at the highest layer, continuing inquiry(If the answer in step 309 is no, then the call processor treats it as an unknown connection (step 318), asks the SCS to set up the call (step 319) and discards the packet (step 320) see col:17 lines 4-14); and

if the looking up result is that there is record of user to be looked up, when the user node in the route record is the soft switch control device, obtaining the user route, when the user node is not soft switch device, continuing inquiring the user node in the record (If the answer is yes, the call processor decodes the packet to find the network protocol source and destination addresses (steps 310-311) see col: 16 lines 51-67).

Regarding claim 16, note that Dobbins teaches the route service device of claim 10, wherein the operation types of the route record have three kinds: addition, move-out and account-cancel (The call processor 77 removes the ARP request from the queue and fills in the destination MAC address and sends an ARP response to the source end system. The source end system now has an updated ARP cache see col: 17 lines 49-67 and col: 18 lines 1-10)., said inquiry judgment 10 unit makes judgment according to the

looking up result in the route information database (The call processor 77 removes the ARP request from the queue and fills in the destination MAC address and sends an ARP response to the source end system. The source end system now has an updated ARP cache see col:17 lines 49-67 and col:18 lines 1-10) by the following logic:

if the looking up result is that there is no record of user to be looked up, for the node that is at the highest layer, determining that the user does not exist; if the node is not at the highest layer, continuing inquiry, or returning father node to the inquiry node (If the answer in step 309 is no, then the call processor treats it as an unknown connection (step 318), asks the SCS to set up the call (step 319) and discards the packet (step 320) see col:17 lines 4-14) as the next jump inquiry node, so as to instruct the inquiry node to perform route inquiry with the next jump inquiry node;

if the looking up result is that there is record of user to be looked up in the looking up result(The call processor and the host agent determine whether it is a broadcast destination (step 309). If the answer is yes, the call processor decodes the packet to find the network protocol source and destination addresses (steps 310-311) see col: 16 lines 51-67), discerning the operation type in the record again:

when the operation type is addition, for the user node in record being the soft switch control device, obtaining the user route; for the user node being the route service device, continuing inquiring the user node, or returning the user node to the inquiry node as the next jump inquiry node, so as to instruct the inquiry node to perform route inquiry with the next jump inquiry node (each switch receives cells from each port and then forwards them out the correct port (Unicast) or ports (Multicast). As the cell is

forwarded to a switch, its header is modified with "next switch" routing information. This process continues at each cell switch until the cell is received at the end node see col: 14 lines 37-58).

when the operation type is move-out, for the node that is at the highest layer, determining that the user does not exist, for the node that is not at the highest layer(If the answer in step 309 is no, then the call processor treats it as an unknown connection (step 318), asks the SCS to set up the call (step 319) and discards the packet (step 320) see col:17 lines 4-14),

continuing inquiring its father node, or returning the father node to the inquiry node as the next jump inquiry node, so as to instruct the inquiry node to perform the route inquiry with the next jump inquiry node; and When the operation type is account-cancel, determining that the user does not exist node (each switch receives cells from each port and then forwards them out the correct port (Unicast) or ports (Multicast). As the cell is forwarded to a switch, its header is modified with "next switch" routing information. This process continues at each cell switch until the cell is received at the end node see col: 14 lines 37-58).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(US 6614781 B1), (Elliott et al) discloses, Voice Telecommunication Network Architecture.

(PATNO 5613069), (Walker) Non-Blocking Packet Switching Network with Dynamic Routing codes Having Incoming Packets Diverted and Temporarily stored in processor inputs when network output not available.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHALID ABDALLA whose telephone number is (571)270-7526. The examiner can normally be reached on MONDAY THROUGH FRIDAY 7 AM TO 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JINHEE LEE can be reached on 571-272-1977. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner, Art Unit 4173

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